

CALFED BAY-DELTA PROGRAM**Office Memorandum**

Date: March 13, 1996
To: Victor Pacheco
From: Michael Norris
Subject: A Comparison of the latest proposed Delta Long-Term Levee Improvement Plan with the Core Actions in the February CALFED Bay-Delta Program Draft Alternatives package

As per your instructions, I have reviewed the latest proposed Delta Long-Term Levee Improvement Plan that was prepared by the team of Bill Forsythe and Curt Schmutte from the Delta Levee Special Projects Planning unit. A number of new and different actions for long-term levee improvements are proposed including a new direction for the Special Projects unit. It has been suggested that the proposed "long-term levee improvements" are so essential to any proposed Delta alternative that they should be Core Actions. I compared the submittal by Forsythe/Schmutte with the Core Actions that are in the February Workshop 5 draft alternatives package to see if there is any redundancy or if some changes are necessary in the Core Actions to incorporate the ideas proposed in the Delta Long-Term Levee Improvement Plan. Here are my observations:

- The Core Actions under the Improvements to System Reliability category are worded in a broad sort of way and are not as specific as the proposed Delta Long-Term Levee Improvement Plan. Some ideas of the Delta Long-Term Levee Improvement Plan can be incorporated into Core Actions but not every idea word-for-word.
- The first core action is to Monitor, Evaluate, Maintain, and Stabilize Existing Levees and the fifth one is to Provide Funding for Maintenance and Stabilization. These are too related to be each listed individually as Core Actions as evidenced by the fact that the latter actually refers back to the first one in the text. These need to be rolled up into one Core Action that reads "Monitor, Evaluate, Maintain, and Stabilize Existing Levees and Provide Funding for Future Actions".
- The second, third, and fourth Core Actions under the Improvements to System Reliability category deal with modifying agricultural practices to reduce subsidence, investigating techniques for the beneficial reuse of dredged material, and the establishment of an emergency levee management plan, respectively. These actions are unique enough to stand on their own although they are actually part of the proposed Delta Long-Term Levee Improvement Plan. The first Core Action is proposed to be rewritten (see bullet item below) to make it clear to the reader that the Delta Long-Term Levee Improvement

Plan also includes those other Core Actions as well as a new Core Action to create habitat corridors (see bullet item below). Only minor rewriting of the second, third, and fourth core action would appear to be necessary to insert some ideas (e.g., purchase of easements for subsidence reduction, setting up an insurance fund as part of an emergency management plan, etc.) that are discussed in other bullet items below. It should be noted that the third Core Action regarding the beneficial reuse of dredged material presently discusses funding a pilot study much like the Delta Protection Commission inquired about in a memo dated 9/15/95 as part of the Long Term Management Strategy (LTMS) program in the Bay Area. The memo by Forsythe/Schmutte discusses some specific ideas regarding dredge material reuse but it doesn't appear to be necessary to include these in a Core Action at this time. Alternatively, the third Core Action could be rewritten to acknowledge the "possible levee inventory/study" that the Delta Protection Commission asked about for funding as part of the LTMS.

- The proposed "insurance fund" that Forsythe/Schmutte discuss should be part of the fourth Core Action. If DWR really wants to set up this fund, it is recommended the Core Action be rewritten to include the establishment of this insurance fund to be administered solely by DWR. As an example, the summer levee failure on Little Mandeville Island over a year ago could have used the insurance fund for possible recovery. The fund could also be used to pay State and/or Presidential Disaster Assistance claims pending reimbursement by the Office of Emergency Services (OES) and/or the Federal Emergency Management Agency (FEMA). The fund could also be used to pay LAs for prior Disaster Assistance claims that weren't paid from the three prior Presidential Disasters Declarations of the 1980s. It is recommended that the insurance fund be kept entirely separate from other funding arrangements such as State disaster declarations funded by OES and Presidential disaster declarations funded by OES/FEMA except that the fund could be used to reimburse LAs quickly for pending OES/FEMA claims with the LAs thereafter reimbursing DWR upon receiving their checks from OES/FEMA. This goes along with what Forsythe/Schmutte discussed in their memo concerning the waiting that the local agency (LA) has to endure before getting paid under the Delta Levee Subventions Program and how this adds on an additional 8% in non-reimbursable bank interest the LA incurs in having to pay contractors themselves before being reimbursed later by DWR. There does not appear to be any need for OES and/or FEMA to get involved in this "cash-flow" arrangement since it's nothing different than what a bank would do in lending the LA money on an interim basis except that the insurance fund would likely charge little or no interest. In addition, agencies like OES and FEMA will surely want to call some of the shots regarding how to run the insurance fund if DWR lets them in.
- The establishment of an "insurance fund" is a task bigger than people may realize at this time. An insurance fund to pay small claims for earthquake damage was set up by the State a few years ago and was abolished by the Legislature about a year later. It was mentioned by opponents that the fund never would have had enough funding in it to remain solvent even though any claim was limited to \$15,000. However, it is also possible that simply too many people stuck their noses into the matter and the fund might

still be around today if people had left it alone and premiums had continued to be collected. Years after the prior fund was abandoned, the State still does not have an earthquake insurance bill of its own and three different versions of measures by three different authors are presently being discussed in the Legislature. Some insurance funds that the State has formed in the last few years have been successful. The State Water Resources Control Board (SWRCB) Division of Loans and Grants set up an insurance fund to pay for the cleanup of soil and groundwater from leaking underground petroleum storage tanks and the fund has remained solvent. The program started in 1992 and is set to expire in 2005. The SWRCB program collects approximately \$22 million/quarter from the tank owners through a special tax paid to the Board of Equalization and the monies are used to pay such things as the \$227 million in cleanup costs that have been incurred to date and the salaries of 65 SWRCB employees who are working within the unit. The SWRCB underground tanks program could serve as an example to CALFED that a proposed insurance fund is no small undertaking. In any case, any insurance fund proposed by DWR will probably never get out of the starting blocks if too many people/agencies are brought into the picture. However, it would appear to be alright to mention the "concept" of an insurance fund at this time and work out the details later if it is made clear what the purpose of the fund is.

- The modification of agricultural practices to reduce subsidence (the second Core Action) may already be built into Senate Bill 34 (SB34) to some extent in section 12316 of the Special Flood Control Project Program and section 12987 of the Delta Levee Maintenance Subventions Program. Both sections allows the purchase of easements up to 400-feet in width from the crown of levees. There is no wording in sections 12316/12987 for the purpose of the easement being to "reduce subsidence". Instead, it is mentioned that the easement is to "maintain the structural stability of the levee". This type of funding has never been used in the eight years of SB34 except for a 30-acre mitigation project on Terminous that was actually funded for "mitigation" reasons and not for stability of the levee. Byron Tract asked DWR for funding years ago for the reason of preventing the encroachment of homes against the levee slope and not for "levee stability" but this request was turned down by DWR since it did not appear to meet the intent of SB34. DWR has set up some 400-foot easements on their own on land that the State owns and leases back to farmers on Sherman and Twitchell Islands but DWR does not reimburse itself from SB34 for doing it. Regardless, it would appear sections 12316/12987 can also be used for subsidence control and the proposed long-term levee improvement plan by Forsythe/Schmutte could be rewritten to propose the "90/10 State/LA" cost share arrangement only for LAs that set aside 400-foot buffer zones for the main purpose of subsidence control and a "lesser" cost share agreement for LAs that decline to go along with the easement arrangement. There could even be some form of a subsidy arrangement for payment to LAs for lost profits for crops that were not grown within the easement. The second Core Action could be rewritten to resurrect sections 12316/12987 of SB34 (which appears to have been forgotten about over the years) as a subsidence reduction measure. Alternatively, Schmutte has proposed that the old sections of SB34 not be resurrected but instead that subsidence control on an individual island-by-island basis be a requirement for LAs to receive any reimbursement from the Delta Long-

Term Levee Improvement Plan. Some minor rewriting of the Core Action will be required after it is decided which of the proposed schemes (or a new one not yet discussed?) is the best way to achieve subsidence control. It should be noted that the present Core Action only discusses a buffer zone of 25-50 yards in width which could be woefully inadequate in most cases.

- The "special habitat" program being proposed by Forsythe/Schmutte is unique enough to require a Core Action of its own. This could take the place of the fifth Core Action (provide funding for maintenance and stabilization) that I proposed be rolled up into the first Core Action. This Core Action could be written as follows:

Core Action: Establish Habitat Corridors as Mitigation for Impacts From Maintenance and Stabilization of Existing Levees

Terrestrial and aquatic habitat improvement projects will be undertaken in areas that have been determined important for creating habitat corridors. The program will create high quality habitat corridors by utilizing State owned land where they are available, and purchasing land and conservation easements along critical alignments that are not currently owned by the State. The habitat created will be used to offset current and future impacts of both the Subventions Program and Special Projects elements of the Delta Long-Term Levee Improvement Plan.

Core Level of Implementation: *At a core level, this action would be undertaken to begin funding the purchase of the aforementioned habitat corridors based on a prioritization mapping scheme.*

- The first core action would appear to be the most important one and the one requiring the most rewriting. The present wording is as follows:

Core Action: Monitor, Evaluate, Maintain, and Stabilize Existing Levees

Many levees that protect land uses, infrastructure, and habitat in the Delta are inadequately maintained and stabilized against failures caused by overtopping, slippage, or collapse. Furthermore, information is lacking on the condition of most levees in the Delta and where maintenance is needed. It is widely accepted that efforts to maintain and stabilize these existing levees are necessary in the near term. Maintenance standards may differ among different types of levees and different facilities or land uses that are protected by the levees. Entities to perform or fund levee monitoring and evaluations and the actual maintenance and stabilization work could include local reclamation districts, the Department of Water Resources, the U.S. Army Corps of Engineers, and other agencies. Funding of such work, even though widely accepted as necessary, is uncertain as to source and amount. Thus a CALFED core action could be to promote and fund such work.

Core Level of Implementation: *At a core level, this action would be undertaken*

to determine and correct conditions on the sites with highest priority. High-priority sites would include those that are important in protecting residential or commercial developments (e.g., north and east Delta), infrastructure facilities (e.g., highways, pipelines, railroads), and water quality at Delta export locations (e.g., west Delta islands).

It is proposed that the wording for this Core Action be rewritten as follows:

Core Action: Monitor, Evaluate, Maintain, and Stabilize Existing Levees and Provide Funding for Future Actions

Many levees that protect land uses, infrastructure, and habitat in the Delta are inadequately maintained and stabilized against failures caused by overtopping, slippage, or collapse. Furthermore, information is lacking on the condition of most levees in the Delta and where maintenance is needed. It is widely accepted that efforts to maintain and stabilize these existing levees are necessary in the near term. Maintenance standards may differ among different types of levees and different facilities or land uses that are protected by the levees. Entities to perform or fund levee monitoring and evaluations and the actual maintenance and stabilization work could include local reclamation districts, the Department of Water Resources, the U.S. Army Corps of Engineers (Corps), and other agencies. Funding of such work, even though widely accepted as necessary, is uncertain as to source and amount and is set to end with the expiration of Senate Bill 34 (SB34) in 1998. Thus a CALFED core action could be to promote and fund such work after the year 1998 with the establishment of a Delta Long-Term Levee Improvement Plan with more funding than the present SB34 program. The Delta Long-Term Levee Improvement Plan will be comprised of the Subventions Program element and Special Projects element. The Subventions Program element will continue to fund levee maintenance on non-project levee systems throughout the Delta much like the current SB34 program does. The Special Projects element will not necessarily be restricted to work on the eight western Delta islands but will instead develop a prioritization scheme for work on highest priority sites anywhere within the Delta. This work could include the funding for improvements of levees in some cases up to the Corps Public Law 99 (PL99) standard, the purchase of easements for subsidence control, the investigation of techniques for the beneficial reuse of dredged materials, the establishment of an emergency levee management plan including setting up an insurance fund, and the establishment of habitat corridors as mitigation for impacts from the maintenance and stabilization of existing levees.

Core Level of Implementation: *At a core level, this action would be undertaken to determine and correct conditions on the sites with highest priority. High-priority sites would be determined through a prioritization matrix ranking scheme that is expected to include criteria such as the protection of public infrastructure facilities (e.g., highways, pipelines, railroads), private infrastructure (e.g., homes, marinas), navigation (e.g., project/direct agreement levee systems), water quality at Delta export locations (e.g., west Delta islands), local culture, recreation, and fish and wildlife benefits. Different*

weighting is likely to be assigned for different criteria and high-priority sites will likely be islands that score high under several different criteria.

levee.imp

Workshop 5 Information Packet

Draft Alternatives

 CALFEED

 BAY-DELTA

 PROGRAM

CORE ACTION: Manage Land Uses to Protect Water Quality

Various forms of land use in the Bay-Delta watershed contribute to reduced water quality within the basin. Timber harvesting and road building in mountain watersheds can produce substantial siltation in downstream areas if not managed carefully. Grazing along streambanks can lead to shoreline erosion, loss of riparian vegetation, and associated increases in water temperatures. Agricultural practices can increase water temperatures and introduce pollutants directly into water bodies. Better management of watershed land uses can improve water quality in the Delta watershed. For this core action, CALFED could promote, coordinate, and/or fund a program to identify high-priority watershed areas and implement management improvements in those areas.

CORE LEVEL OF IMPLEMENTATION: A core level of implementation would consist of funding a cooperative program for willing landowners to improve land use practices on watershed areas tributary to reservoirs operated by local water districts that participate in the CALFED Bay-Delta Program. Core-level implementation could also include development and dissemination of land management information for landowners.

IMPROVEMENTS TO SYSTEM RELIABILITY

CORE ACTION: Monitor, Evaluate, Maintain, and Stabilize Existing Levees

Many levees that protect land uses, infrastructure, and habitat in the Delta are inadequately maintained and stabilized against failures caused by overtopping, slippage, or collapse. Furthermore, information is lacking on the condition of most levees in the Delta and where maintenance is needed. It is widely accepted that efforts to maintain and stabilize these existing levees are necessary in the near term. Maintenance standards may differ among different types of levees and different facilities or land uses that are protected by the levees. Entities to perform or fund levee monitoring and evaluations and the actual maintenance and stabilization work could include local reclamation districts, the Department of Water Resources, the U.S. Army Corps of Engineers, and other agencies. Funding of such work, even though widely accepted as necessary, is uncertain as to source and amount. Thus a CALFED core action could be to promote and fund such work.

CORE LEVEL OF IMPLEMENTATION: At a core level, this action would be undertaken to determine and correct conditions on the sites with highest priority. High-priority sites would include those that are important in protecting residential or commercial developments (e.g., north and east Delta), infrastructure facilities (e.g., highways, pipelines, railroads), and water quality at Delta export locations (e.g., west Delta islands).

CORE ACTION: Modify Agricultural Practices to Reduce Subsidence

Soil tilling for intensive agricultural cropping causes peat oxidation and thereby Delta island subsidence where peat soils are predominant. Subsidence adjacent to levees is particularly threatening

to levee stability. Ceasing agricultural practices and establishing wetland hydrologic conditions in peat-soil areas would reduce peat oxidation and resulting subsidence. Subsidence reduction could be achieved by providing incentives for voluntary participation by farmers in halting agriculture on peat soils or purchasing conservation easements that eliminate cropping practices. Such a subsidence reduction program would also benefit Delta water quality by reducing discharge of dissolved organic carbon (DOC) in drainage from oxidized peat soils. Such a program would also increase the extent of wetland habitats in areas where subsidence is controlled.

CORE LEVEL OF IMPLEMENTATION: At a core level, this action could be applied to a zone, 25-50 yards wide for example, along the interior toes of levees on islands dominated by peat soils. This zone immediately adjacent to the levee toes is most critical for halting subsidence that threatens levee stability. The core level of implementation would focus on cooperative partnerships with landowners to voluntarily cease agricultural practices on peat soils near levee toes.

CORE ACTION: Investigate Techniques for Beneficial Reuse of Dredged Materials *

Dredged materials excavated in maintaining channels for navigation and flood conveyance could provide a valuable resource for maintaining and improving levees and for reclaiming wetland habitats on subsided Delta islands. Uncertainty exists, however, about the suitability of such materials for these kinds of beneficial reuse. For example, channel sediments are suspected of containing toxic pollutants; these sediments need to be monitored and evaluated for reuse. Dredged materials also may not be of suitable texture and consistency for levee maintenance or to support desirable plant growth. A CALFED core action could consist of conducting a pilot program to examine and evaluate techniques for using dredged material in ways that are feasible and do not cause adverse impacts to water quality and ecosystem health.

CORE LEVEL OF IMPLEMENTATION: A core level of implementation could consist of CALFED coordinating and funding a pilot program to evaluate techniques for beneficial reuse of dredged materials.

CORE ACTION: Establish an Emergency Levee Management Plan

Currently, funding and clear authority does not exist regarding the roles and responsibilities of various federal, state, and local agencies in responding to levee failures. Agency responses could consist of immediate actions at the time of the emergency to block or control a levee break and longer term actions to recover or rehabilitate a flooded island. Agencies with possible roles in responding to emergencies could include the U.S. Army Corps of Engineers, Federal Emergency Management Agency, Department of Water Resources, and local reclamation districts. An emergency management plan would provide funding and clearly identify the responsibilities of each of these and other agencies in responding to levee failures, both immediately and for longer term recovery.

CORE LEVEL OF IMPLEMENTATION: At a core level, an emergency levee management plan would be established for the islands in the Delta with highest priority (e.g., those where lives or improved property would be affected).

CORE ACTION: Provide Funding for Maintenance and Stabilization

Funding sources and amounts for maintaining Delta levees and channel flood-conveyance capacities at the current level of flood protection in the Delta are uncertain. It is likely that providing a core level of funding for such work could receive broad support in all CALFED program alternatives. A number of different mechanisms are available to generate such funding if CALFED decides to implement such an action.

CORE LEVEL OF IMPLEMENTATION: At a core level, the funding made available would be sufficient for levee maintenance and stabilization to maintain the current level of flood protection on the sites with highest priority (see core action above "Maintain and Stabilize Existing Levees"). *

DELTA LONG-TERM LEVEE IMPROVEMENT PLAN

The San Francisco/Sacramento-San Joaquin Delta Estuary is a critically important part of California's natural environment and economy. The Delta Long-Term Levee Improvement Plan (Improvement Plan) will build on the successes of previous habitat and levee improvement programs to ensure the long-term viability of this unique and irreplaceable resource.

Two key aspects of the Improvement Plan (Figure 1) will be a levee maintenance subventions program (Subventions Program), and a special habitat and flood control projects program (Special Projects Program). The Programs will be responsible for supporting local agency (LA) annual maintenance activities, encouraging levee upgrades from the State's Hazard Mitigation Plan (HMP) short term standard to the U.S. Army Corps of Engineers (Corps) Public Law 99-84 (PL-99) standard, responding to levee emergency situations, proactive mitigation banking, upgrading critical levee sections, creating terrestrial and aquatic habitat, improving recreational opportunities, and encouraging beneficial reuse of Bay-Delta dredge material.

The Delta Flood Protection Act of 1988 (SB-34) has helped protect islands from flooding and has increased the overall flood protection of the Delta. However, SB-34 has lacked the funding to improve levees above the minimum short term HMP standard. The Improvement Plan should have a minimum funding level of at least \$20,000,000 per year which should be split between the Subventions and Special Projects Programs. This minimum funding will meet the current demands for maintenance funds, allow some annual levee improvements above the HMP level, and improve the estuary through habitat enhancements.

LEVEE SUBVENTIONS PROGRAM

The Improvement Plan will incorporate the successes of the SB-34 Subventions program and include additional responsibilities that will contribute to improved reliability of Delta levees and habitat enhancement.

Currently, LA's fund their annual reclamation and levee maintenance activities by assessments on the land protected by the levees. The State has an assistance program, the SB-34 Delta Levee Maintenance Subventions program, that provides reimbursement for up to 75% of LA's costs to maintain and rehabilitate nonproject levees. The SB 34 Subventions program has been successful in its purpose but has been underfunded with respect to the legislative intent, and oversubscribed by the LA's. Lack of funding has resulted in approximately 40% of LA's costs being reimbursed by the State, and 60% of the costs born by the LA's -- significantly less than the 75% State cost share that the legislation intended. Also, most LA's must finance the work until State reimbursement is received, adding an additional 8% unreimbursable cost. The Improvement Plan should incorporate advance payments to reduce finance charges.

Changing the cost sharing structure and guaranteeing a minimum level of funding for all LA's would help ensure that annual maintenance is performed, and help assure the reliability of the Delta levees. The LA's and the State pay for most of the levee work in the Delta, while a large portion of the State's population are beneficiaries of the protection provided by the Delta levees. Therefore, increasing the cost sharing ratio to a 90/10 State/LA, and providing a guaranteed minimum base level of funding of \$10,000 per levee mile per year with a set of maintenance guidelines will help reduce the chance for levee failure.

Additionally, \$20,000 per levee mile will be available for levee improvements to the PL-99 standard. Levees that have been maintained to the PL-99 guidelines and standards, and have been

approved prior to a flood that has been declared a national disaster, will be eligible for assistance from the Federal Government on an 80/20 Federal/local cost share. Besides providing long range flood protection, it will supplement existing disaster assistance.

Delays and reductions in payment of FEMA disaster assistance claims as well as less than full reimbursement of the States cost share under SB-34 have left some Reclamation Districts with sizable debts. Financing this debt consumes portions of their annual assessments that could be spent on current levee maintenance. An initial action of the Improvement Plan would be to reimburse the LA's for SB-34 claims to the maximum 75% that would have been paid if the funding had been available. This would include past disaster costs not paid by FEMA that could have been paid by the SB-34 Program. Debt retirement will increase the LA's ability to cost share and will precipitate better participation in the program.

Proactive levee maintenance will reduce the frequency of levee emergencies. Currently, LA's that do not have rigorous inspection and maintenance programs are the most vulnerable to levee emergencies, especially during severe weather events. The Subventions Program will coordinate with OES to handle Delta emergencies, form an insurance fund, and form a multi-agency response team with DWR, the Corps, and DFG, to ensure that emergencies are resolved as quickly and safely as possible.

The insurance fund would be developed to integrate existing disaster assistance funding sources with contributions from Delta landowners and other identified beneficiaries. This will ensure the availability of the type of funding that would be needed to repair and restore flooded islands. The administration of such a program should be coordinated between appropriate State and Federal disaster assistance agencies and the Subventions Program.

Alternative elements of the program could include pre-negotiated or pre-bid contracts. Funding would be independent and would not deplete funds earmarked for the Subventions and Special Projects Programs.

To ensure that the Subventions Program is successful, all participating LA's will be responsible for complying with maintenance guidelines and annual inspections.

SPECIAL HABITAT AND FLOOD CONTROL PROJECTS PROGRAM

To improve the Delta estuary and increase the reliability of Delta beneficial uses, a program to undertake projects to achieve these goals (Figure 2) is necessary. Therefore, a Special Habitat and Flood Control Projects Program (Special Projects) will be created that will create higher quality habitat by improving large habitat corridors.

Levee improvement will be made based on an island's public benefit. A matrix will be developed that contains criteria issues and each island will be evaluated for each criteria issue and a score will be given to each as to the magnitude of the benefit provided by that island. Each criteria issue will be weighted with a factor that identifies the importance of that issue. A sum of the issue/factor product will provide a score for that particular island. The islands will be prioritized based on the total score of each island.

The matrix will account for all the beneficial aspects of an island. Projects with 90/10 cost sharing will be undertaken beginning with the highest priority islands. Improvements will be based on the level of protection needed for protection of public benefits. The levees will be constructed with habitat and recreation characteristics, where appropriate, (Figures 3, 4, and 5) to increase the beneficial aspects of projects.

Terrestrial and aquatic habitat improvement projects will be undertaken in areas that have been determined important for creating habitat corridors. A priority map of these projects (Map 1) will be created identifying the habitat projects to be undertaken and assigning priority to them. The program will create high quality habitat corridors by utilizing State owned land where they are available, and purchasing land and conservation easements along critical alignments that are not currently owned by the State. The habitat created will be used to offset current and future impacts of both the Special Projects, and Subventions Programs.

The habitat created will use an ecosystem approach that enhances habitat to benefit multiple species. The habitat will be self sufficient with monitoring to help ensure that lessons learned from early projects can improve future habitat creation efforts. Evaluation criteria will be developed to determine bank credits in lieu of using the existing Habitat Evaluation Procedure method. A Memorandum of Understanding between all pertinent regulatory and participating agencies will be entered into to provide a comprehensive vision of the programs objectives and success criteria.

Another part of the Special Projects Program will address the beneficial reuse of dredge or suitable alternative materials. Cost effective material for Delta levee improvements are becoming scarce. Currently, most LA's use historic on-island dredge material stockpiles or natural mineral deposits on the island as a source of material for levee work. On island material has been transported and placed by LA's for approximately \$5 per cubic yard, while commercial sources of material can cost in excess of \$20 per cubic yard, in place. The Special Projects Program will coordinate with dredging projects to augment on-island stockpiles where it is appropriate, and will study the applicability of constructing channel sediment traps and dredge material rehandling facilities adjacent to frequently dredged channel sections.

Dredging projects have declined in frequency and magnitude in the last several years due to endangered species concerns. Presently, most of the Delta operates under a six week window to perform dredging. The small time span has created a situation where fewer dredging contractors operate in the Delta. The Special Projects Program will organize a multi-agency team comprised of the shipping ports, the Department of Water Resources, the Corps, the Regional Water Quality Control Board, the Department of Fish and Game, the Bay Conservation Development Commission, and the Delta Protection Commission, to streamline the permitting process and develop a long-term management plan.

* The multi-agency team will coordinate with Delta dredging projects to ensure that the material is stockpiled for later use, and coordinate with the San Francisco Bay Long Term Management Strategy (LTMS) program for upland utilization of in-Bay dredge material. Part of the coordination will include on-going monitoring to develop standards for monitoring future projects. The intent of the monitoring will be to gain a better understanding of the what impacts will result and what level of monitoring is warranted for future projects.

Delta Improvement Plan

Figure 1

Levee Subventions Program

- improve funding reliability
- 90/10 cost sharing
- maintenance funding (\$10,000/yr, mile)
- long term levee standard (PL-99)
- long term upgrade funding (\$20,000/mile)
- reimburse RD's unpaid FEMA and SB-34 claims
- mitigation banking
- emergency response

Special Habitat and Flood Control Projects Program

- implementation priorities
- island priority matrix
- 90/10 cost sharing
- levee improvements based on public benefit
- improve terrestrial habitat
- improve aquatic habitat
- improve recreation
- mitigation banking
- beneficial reuse

Emergency Response

- coordinate with OES
- seek Corps involvement
- multi-agency response team (DWR, Corps, DFG)
- insurance fund
- emergency criteria for Delta region disasters

Mitigation Banking

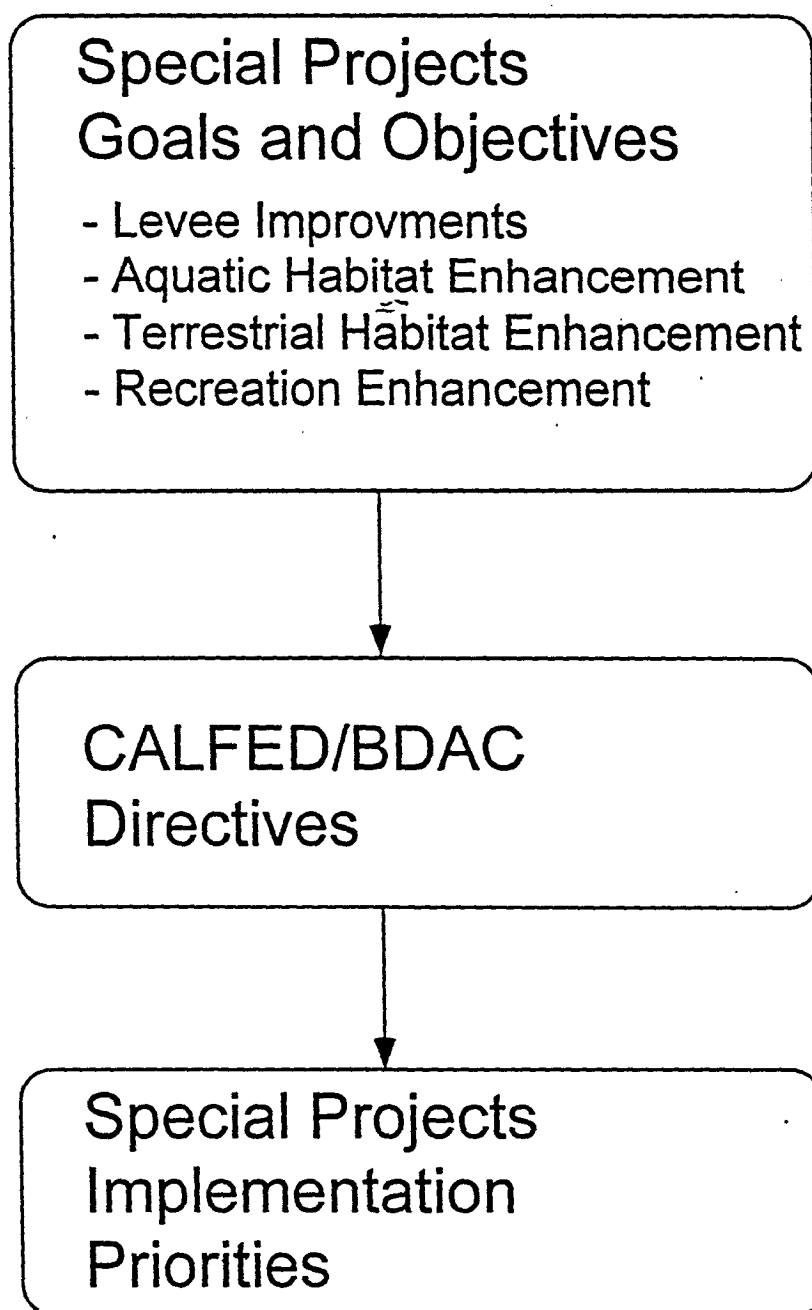
- multi-species banks (ecosystem approach)
- self sufficient (low O&M)
- multi-agency MOU
- evaluation criteria (vs. HEP) for determining bank credits
- monitoring

Beneficial Reuse

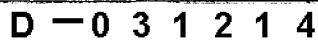
- multi-agency team (Corps, RWQCB, BCDC, DPC)
- economical sources of material
- sediment traps
- rehandling facilities
- cost sharing (w/Corps, Ports)
- long-term management plan
- on-going monitoring plan

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and Habitat Projects



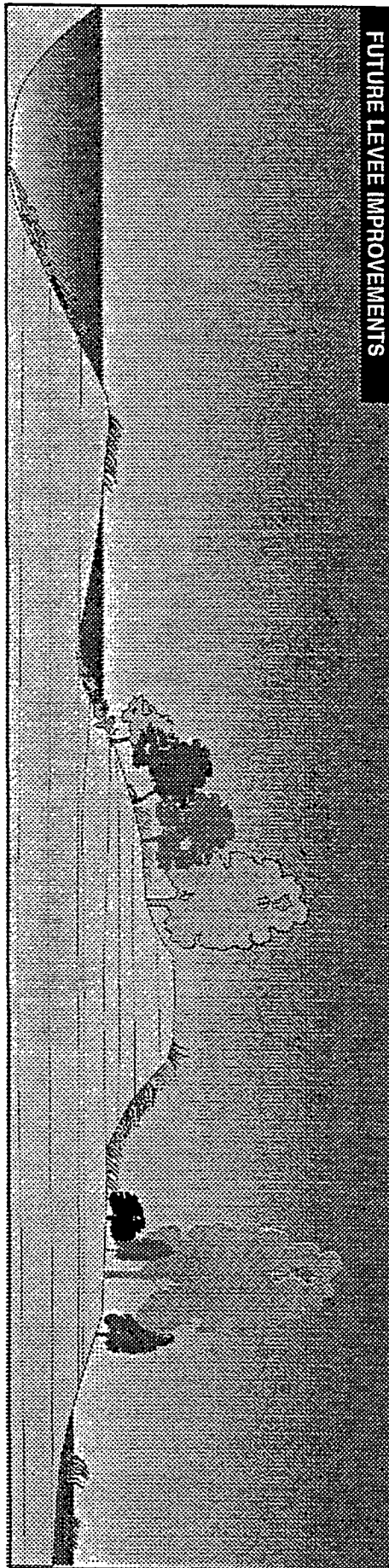
Setback Levee

Figures
3, 4, 5

channel

old levee

new levee



D - 0 3 1 2 1 6

Waterside Levee Habitat Berms & Islands
(plan view)



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LEVEE PRIORITIES AND NEEDS

In order to ensure a reliable Delta levee system and a healthy estuary, a method of evaluating island priorities and needs for distributing Special Projects funds is necessary.

The Special Projects Program will disperse funds based on habitat and flood control goals for the Delta. The design scheme will be one that addresses the levee site specific conditions and achieves the habitat enhancements appropriate for the habitat corridor that the levee is in. This approach will ensure that long-term improvements will be performed on the islands that have the highest relative importance to California and the United States (CALFED).

EVALUATION CRITERIA

Evaluation criteria to determine the relative benefits of each island are categorized as related to: infrastructure, navigation, water quality, culture, recreation, and fish/wildlife. Each of the criteria issues will be given a score that will be the product of the weighing factor and the issue importance (2 indicates extreme importance and 0 indicates no significant importance).

PUBLIC INFRASTRUCTURE

Criteria - Pipelines

Scoring - 2 = Major corridor for pipelines
1 = Pipelines for on-island use
0 = No pipelines

Criteria - Railroads

Scoring - 2 = Corridor for a railroad mainline
1 = Railroad spur
0 = No rail lines

Criteria - State Highways

Scoring - 2 = Major State transportation thoroughfare
1 = Minor State highways
0 = No State highways

Criteria - County Roads

Scoring - 2 = Major county transportation thoroughfare
1 = Minor county roads
0 = No county roads

Criteria - Power Lines

Scoring - 2 = Major corridor for components of regional power grid (i.e. Sherman, Jersey)
1 = Power facilities for on-island use
0 = No power infrastructure

Criteria - Natural Gas Fields

Scoring - 2 = Significant natural gas development
1 = Developed gas fields
0 = No developed gas fields

PRIVATE INFRASTRUCTURE

Criteria - Homes

Scoring - 2 = Highly urbanized (pop>500)
1 = Moderate urbanization (100<pop<500)
0 = Rural (pop<100)

Criteria - Agriculture

Scoring - 2 = Significant agricultural development (>50%)
1 = Some agricultural development (<50%)
0 = No agricultural development

Criteria - Marinas

Scoring - 2 = Significant number of marinas (>2)
1 = Some marinas (1-2)
0 = No marinas

Criteria - Light Industry/Retail

Scoring - 2 = 2 or more
1 = 2 or more
0 = No light industrial/retail development

Criteria - Industry (canneries, etc.)

Scoring - 2 = 2 or more
1 = 1
0 = No industrial development

NAVIGATION

Criteria - Commercial Shipping Lanes

Scoring - 2 = Project or "direct agreement" levees >30% of island's levee system
1 = Project or "direct agreement" levees <30% of island's levee system
0 = No project or "direct agreement" levees

WATER QUALITY

Criteria - Salinity Intrusion

Scoring - 2 = Greatly affects salinity intrusion both long and short term
1 = Affects short term salinity intrusion
0 = Does not affect salinity intrusion appreciably

Criteria - Land use conversion to reduce THM Precursors

Scoring - 2 = Major change in land use to reduce THM precursors
1 = Minor change in land use to reduce THM precursors
0 = No change in land use to reduce THM precursors

LOCAL CULTURE

Criteria - Archaeological Sites

- Scoring - 2 = Significant archaeological sites (burial sites, early settlement remains, etc.)
1 = Some archaeological sites
0 = No archaeological significant sites

Criteria - Historic Monuments

- Scoring - 2 = Significant historical buildings and monuments
1 = Some historical buildings or monuments
0 = No historical buildings or monuments

RECREATION

Criteria - Boating

- Scoring - 2 = Significant boat launch facilities (>2)
1 = Some boat launch facilities (1-2)
0 = No boat launch facilities

Criteria - Hunting/Fishing

- Scoring - 2 = Public and private opportunities for hunting/fishing
1 = Private opportunities for hunting/fishing
0 = No opportunities for hunting/fishing

Criteria - Beaches

- Scoring - 2 = Public and private beach opportunities
1 = Private beach opportunities
0 = No beach opportunities

FISH & WILDLIFE

Criteria - Wetland

- Scoring - 2 = Jurisdictional wetlands over 5 acres
1 = Jurisdictional wetlands > 1, < 5 acres
0 = Jurisdictional wetlands < 1 acre

Criteria - Riparian

- Scoring - 2 = Trees over 30', diverse species, significant linear feet of riparian vegetation
1 = Trees under 30', few species, scattered locations of riparian vegetation
0 = No riparian vegetation

Criteria - Waterfowl

- Scoring - 2 = Waterfowl usage (aerial surveys) top third
1 = Waterfowl usage middle third
0 = Waterfowl usage bottom third

Criteria - Plants/Animals

- Scoring - 2 = 3 or more protected species
1 = 1 or 2 protected species
0 = No protected species

Criteria - SRA

- Scoring - 2 = Significant waterside berms and channel islands

1 = Some SRA habitat
0 = No SRA habitat

ISLAND PRIORITIES

CRITERIA		ISLANDS								
		Sherman			Twitchell			Webb		
		Weight	Score	Total	Weight	Score	Total	Weight	Score	Total
Public Infrastructure	Pipelines									
	Railroads									
	State Highway									
	County Roads									
	Power Lines									
	Natural Gas Fields									
Private Infrastructure	Homes									
	Agriculture									
	Marinas									
	Light Industry/Retail Industry (canneries, etc.)									
Navigation	Commercial Ship Lanes									
Water Quality	Salinity Intrusion									
	THM Precursors									
Local Culture	Archaeological Sites									
	Historic Monuments									
Recreation	Boating									
	Hunting/Fishing									
	Beaches									
Fish and Wildlife	Wetland									
	Riparian									
	Waterfowl									
	Plants/Animals									
SRA										
GRAND SCORE										

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